

**APPROVAL PROCESS FOR CONSTRUCTION ACTIVITIES ON OR NEAR INDIVIDUAL  
HAZARDOUS SUBSTANCE SITES (IHSSs)**

EG&G ROCKY FLATS PLANT  
EMD MANUAL OPERATION SOP

Manual:

5-21000-OPS

Procedure No.:

GT24, Rev. 0

Page:

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Effective Date:

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Organization:

Environmental Management

Category 2

**INFORMATION  
ONLY**

TITLE:

APPROVAL PROCESS FOR  
CONSTRUCTION ACTIVITIES ON  
OR NEAR INDIVIDUAL HAZARDOUS  
SUBSTANCE SITES (IHSSs)

Approved By:

*[Signature]*  
(Name of Approver)

5/12/92  
(Date)

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**ADMIN RECORD**

REVIEWED FOR CLASSIFICATION/UCNI

By *[Signature]*

Date *Jan 12 1992*

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## 2.0 PURPOSE AND SCOPE

This standard operating procedure (SOP) describes procedures that will be used at the Rocky Flats Plant (RFP) for obtaining appropriate approval for construction activities on or near Individual Hazardous Substance Sites (IHSSs). This SOP is applicable to all operations conducted at the Rocky Flats plant site involving any type of construction including excavation as defined in the plant H&S manual. This SOP describes personnel responsibilities and qualifications, and procedures for construction activities.

## 3.0 RESPONSIBILITIES AND QUALIFICATIONS

Personnel overseeing construction activities will be engineers or other trained construction coordination personnel with an appropriate amount of applicable field experience or on-the-job training under the supervision of another qualified person. In addition, all personnel are required to have a complete understanding of the procedures described within this SOP and receive specific training regarding these procedures.

Personnel using light or heavy equipment, scientific monitoring devices, or operating company vehicles must have appropriate training and/or licenses.

## 4.0 REFERENCES

### 4.1 SOURCE REFERENCES

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The following is a reference reviewed prior to the writing of this procedure:

A Compendium of Superfund Field Operations Methods. EPA/540/P-87/001. December 1987.

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EG&G. Rocky Flats Plant Environmental Restoration Health and Safety Program Plan.  
October 1990.

#### 4.2 INTERNAL REFERENCES

Related SOPs cross-referenced by this SOP are as follows:

- SOP FO.1, Air Monitoring and Dust Control
- SOP FO.3, General Equipment Decontamination
- SOP FO.4, Heavy Equipment Decontamination
- SOP FO.15, Photoionization Detectors (PIDs) and Flame Ionization Detectors (FIDs)
- SOP FO.16, Field Radiological Measurements

#### 5.0 CONSTRUCTION PROCEDURES

##### 5.1 IHSS BOUNDARIES

IHSS boundaries are not legally defined, (i.e., boundaries cannot be staked to the nearest foot). Therefore, they are subject to interpretation. IHSS location maps that are presently in circulation are to be used for preliminary planning only. If a determination of a IHSS boundary is required in the field, this determination must be made by designated EM personnel in coordination with the Rocky Flats Plant excavation coordinator.

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## **5.2 CONSTRUCTION AUTHORIZATION**

All proposed construction and excavation plans on or near IHSSs must be presented to EM personnel for approval. Site drawings showing proposed construction and excavation locations, as well as an excavation plan showing the placement of excavated soils must be submitted to the RFP Excavation Coordinator in the Construction Management (CM) branch of Plant Facilities Program Management. The plans will be reviewed by a joint EM, H&S, and CM excavation committee (known as the Soil Disturbance Assessment Committee) for compliance with EPA and CDH guidelines, proper H&S procedures, and for interference with plant utilities.

Additionally, all projects will be reviewed by EM to determine whether a IHSS will be impacted by possible groundwater inflow. Approval of the joint excavation committee, must be obtained before excavation to proceed.

## **5.3 SAMPLING**

If a proposed construction project has been deemed by Environmental Management to impact a IHSS, a sampling plan will be required and sampling will be done. At the completion of sampling, a risk assessment will be completed using analytical data from samples to get the disposition of the soils. The preparation of the sampling plan shall be at the direction of the EM department. Costs incurred to complete sampling, analysis, and risk assessment shall be assumed by the project user.

## **5.4 PROCEDURES**

Construction activities that may generate dust will be carried out according to SOP FO.1, Air Monitoring and Dust Control. During construction activities that require excavation of soil,

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monitoring for radionuclides and volatile organic compounds (VOCs) may be required by H&S. See SOP FO.15, Photoionization Detectors (PIDs) and Flame Ionization Detectors (FIDs) SOP FO.16, Field Radiological Measurements, and the Site-Specific Health and Safety Plan for more information regarding the use of monitoring instruments.

All residual soils within a IHSS will remain within that specified unit. There are provisions for moving soils off of IHSSs in special circumstances where the soil can be characterized as non-hazardous material. This determination will only be made by EM after sampling and risk analysis is completed. Additional time should be planned for projects if this is to be considered. The soil to be left in the IHSS may be graded, mounded, and used as backfill, as long as it can be demonstrated that there will be no danger of distribution off of the IHSS by erosion, wind, or hydraulic (surface or subsurface) action. Removal of soils from the immediate area of the excavation must be outlined in the excavation plan.

Treatment of residual soils and redistribution back into a IHSS is prohibited. Soil brought into a IHSS will be considered potentially contaminated soil, and therefore cannot be removed from the unit once it is brought in. Transfer of soils between IHSSs is prohibited.

Excavation in or near IHSSs must consider possible encounters with contaminated groundwater. Pumping of groundwater off a IHSS into other areas is prohibited without proper authorization. This authorization can be obtained only after sampling and analysis (contact the Clean Water Act division of EM at plant extension 4368). Additionally, design of excavations that encounter potentially contaminated groundwater may require sampling points (sampling wells) that will remain after construction activities are complete. All incidental waters that interfere with construction will be tested before they can be removed. For excavations in or near IHSSs that may encounter contaminated groundwater, steps will be taken to ensure that future migration of groundwater out of the IHSS will not occur.

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Residual soils that cannot be graded, mounded, or used as backfill will be placed in appropriate containers and stored at the IHSS.

#### 6.0 DECONTAMINATION

All equipment will be decontaminated before arrival at the work site and again between construction sites. See SOP FO.3, General Equipment Decontamination, and SOP FO.4, Heavy Equipment Decontamination, for specific details regarding decontamination.

#### 7.0 DOCUMENTATION

All information required by this SOP will be documented on the appropriate forms attached to this SOP.

IHSS construction will require an excavation package. The person proposing construction will submit a completed Soil Disturbance Assessment Committee Evaluation Form (see attached), accurate plans/drawings showing specific location of work, and scope of work to be performed to the Excavation Administrator. This request shall be made a minimum of two weeks prior to start of work.

The Excavation Specialist will prepare a Site Survey Determination for Environmental Impact and Worker Exposure form and a Soil Disturbance Assessment form (see attached). He will submit the Site Survey Determination for Environmental Impact and Worker Exposure form to Environmental Management (EM), Industrial Hygiene (IH), Facilities Engineering (FE), Radiological Engineering (RE), and Construction Safety (CS) for pre-job environmental and worker potential hazard(s) exposure assessment.

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After completion the Excavation Package will be forwarded to FE for utility determination. The package must then be signed by FE, EM, and CS. A copy of the Excavation Package will be included as an appendix in the Integrated Work Control Package.

Prior to the start of work, the Excavation Specialist will survey the jobsite for utility interferences and give a field briefing to the supervisors and workers. The briefing will give details on any known hazards and/or precautions. The Excavation Package and/or the Integrated Work Control Package (IWCP) will then be signed by the Excavation Specialist.

The Excavation Specialist is responsible for inspecting the site daily when personnel entry is required. Upon completion of the inspection, the person that performed the inspection will initial the Rocky Flats Soil Disturbance Approval Form (see attached). This form will be maintained with the IWCP as part of the Excavation Package.

## ENVIRONMENTAL ASSESSMENT FOR CONSTRUCTION ACTIVITIES

Authorization No.: TG048663

Reviewer: Environmental Restoration Management/Facilities Operations  
Management (ERM/FOM), T891E, x5949.

Date: April 7, 1993

### OBJECTIVE:

Clean Ditches and Culverts Plantwide. This report is to serve as an addendum to add Culvert #13 and the ditches to the report completed June 3, 1992, by Tom Ottensman (see attachment #1).

### JOB DESCRIPTION:

See attached.

### ENVIRONMENTAL ASSESSMENT:

#### CULVERT #13:

The proposed construction/excavation involving Culvert #13 (see attachment #2) is not located in an Individual Hazardous Substance Site (IHSS) or Toxic Substance Control Act (TSCA) site.

ERM/FOM does not require sampling of the soil and/or water prior to or during construction/excavation activities.

#### DITCHES:

Many of the ditches to be dressed and cleaned are located in, or themselves comprise an Individual Hazardous Substance Site (IHSS). Those ditches are summarized below. ERM/FOM requires that all dirt, soil, gravel and rock removed from any of the ditches to be cleaned, remain on the banks of the ditch, in the immediate area from which they were originally removed. This material is to be spread and incorporated into the banks. ERM/FOM does not require sampling of the soil and/or water encountered during the construction/excavation activities.

The ditches paralleling Central Avenue are located in or near the following IHSS's (see attachment #1A):

#### IHSS #191, OU 13, Hydrogen Peroxide Spill (see attachment #3):

A drum of 35% Hydrogen Peroxide flowed into a culvert at the corner of Fifth Street and Central Avenue. The area of the spill is presently paved.

#### IHSS #157.1, OU 13, Radioactive Site North Area (see attachment #4):

Contamination associated with the handling and steaming of contaminated rags was observed in the soils around Bldg. 442. This contamination included uranium, beryllium, solvents, and radioactive metal shavings, which could have been released into the Central Avenue Ditch.

#### IHSS #187, OU 12, Sulfuric Acid Spill (see Attachment #5):



this contamination could have entered the ditch along the east side of Bldg. 371 parking lot.

Potential Area of Concern (PAC) #300-707, Sanitizer Spill (see attachment #19):  
Approximately three gallons of sanitizer consisting of water and formaldehyde were spilled on the shoulder of the road at Sixth Street and Sage Avenue.

The ditches paralleling Seventh Street (north of Central) and 51 Drive are located in the following IHSS's (see attachment #20):

IHSS #117.2, OU 13, Middle Site Chemical Storage (see attachment #21):  
Leaks and spills in this area have consisted of acids, oils, soaps, solvents, beryllium scrap, and aluminum nitrate. Any of these contaminants could have entered the drainage ditches.

IHSS #158, OU 13, Radioactive Site - Bldg. 551 (see attachment #22):  
Residual contamination from leakage of waste boxes loaded onto railroad cars in the vicinity of Bldg. 551 could be present in the drainage ditches. Uranium is the contaminating constituent.

IHSS #169, OU 13, Waste Drum Peroxide Burial (see attachment #23):  
Hydrogen Peroxide spills drained into a culvert at the corner of Fifth and Central Avenue, were diluted with water and buried.

The ditches paralleling Cottonwood Avenue, 44 Drive, and Seventh Street south of Central Avenue are located in the following IHSS's (see attachment #24):

IHSS #157.2, OU 12, Radioactive Site South Area (see attachment #25):  
Numerous incidents of contamination releases are associated with the area around Bldg. 444. These contaminants include uranium, beryllium, solvents, and oils. The drainage ditches around the area could contain these contaminants.

IHSS #189, OU 12, Nitric Acid Tanks (see attachment #26):  
Nitric acid spills have occurred in the area of the railroad tracks east of Bldg. 444, and may have contaminated soils since washed into the drainage ditches.

IHSS #160, OU 14, Radioactive Site - 444 Parking Lot (see attachment #27):  
Uranium and plutonium, as well as oils and solvents, have previously been stored in the area now utilized as the 444 parking lot; and may have entered the drainage ditches east of the lot.

IHSS #136.2, OU 12, Cooling Tower Pond East of Bldg. 444 (see attachment #28):  
Cooling tower cleansers were contained in ponds east of Bldg. 444 and allowed to evaporate, at which time the ponds were backfilled. The cleaning agents may have contained chromium and lithium.

IHSS #117.3, (see attachment #7 above).

#### WETLANDS AND ENDANGERED SPECIES:

Not applicable, per Claire Reno, NEPA Division.

Some 1500 gallons of acid leaked from a tank located east of Bldg. 443, and flowed east. Some of the spill may have entered the Central Avenue ditch east of Bldg. 442.

IHSS #152, OU 13, Fuel Oil Tank 221 Spills (see attachment #6):

Past spills of No. 6 fuel oil from the tanks located on the southwest corner of Central Avenue and Seventh Street have flowed into the Central Avenue ditch.

IHSS #117.3, OU 13, Chemical Storage - South Site (see attachment #7):

Spills from a storage site located at the site of present fuel tanks 221 and 224 consisted of oils containing plutonium.

IHSS #190, OU 13, Caustic Leak (see attachment #8):

Past spills of sodium hydroxide have flowed into the Central Avenue ditch.

IHSS #113, OU 2, Mound Area (see attachment #9):

Contaminated combustible wastes, and organic liquid wastes with uranium and plutonium elements were placed in the Mound Area. The Central Avenue ditch flows through this area.

IHSS #162, OU 14, Radioactive Site - 700 Area Site #2 (see attachment #10):

Some radioactive contamination was detected in an excavation located along Eighth Street and Central Avenue. Some residual contamination may have entered the Central Avenue ditch.

IHSS #172, OU 8, Central Avenue Waste Spill (see attachment #11):

A leaking drum on a truck spilled radioactive contaminated solvents along portions of Central Avenue, some of which may have reached the ditch.

IHSS #108, OU 2, Trench T-1 (see attachment #12):

Drums of depleted uranium chips and lathe coolant were buried in a trench approximately 200 feet long, 15 feet wide, and 5 feet deep. This trench is only a few feet south of the Central Avenue Ditch.

IHSS #153, OU 2, Oil Burn Pit (see attachment #13):

Drums containing oil contaminated with uranium were burned in an open pit located north of Central Avenue and adjacent to the present Central Avenue ditch.

The ditches paralleling Sage Avenue are located in or near the following IHSS's (see attachment #14):

IHSS #128, OU 13, Oil Burn Pit No. 1 (see attachment #15):

Contaminated oil was burned in a pit located north of Bldg. 331, and the pit was later backfilled.

IHSS #134, OU 13, Metal Disposal Site North Area (see attachment #16):

Reactive metals were burned in this area, part of which is now covered by Sage Avenue.

IHSS #156.1, OU 14, Bldg. 371 Parking Lot (see attachment #17):

At one time contaminated soils may have been piled in the area now covered by the 371 parking lot.

IHSS #186, OU 13, Valve Vaults 11, 12, and 13 (see attachment #18):

Process wastes consisting of Oakite, solar pond water, and various radioactive acidic liquids have leaked into valve boxes and the surrounding soils. Some of